

CLAIMS

1. A method of deposition of a silicon layer on a single-crystal silicon substrate, so that the silicon layer is a single-crystal layer, but of different orientation than the substrate, including the steps of:

5 defining a window on the substrate;

creating inside the window interstitial defects with an atomic proportion lower than one for one hundred; and

performing a silicon deposition in conditions generally corresponding to those of an epitaxial deposition, but at a temperature lower than 900°C.

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2. The method of claim 1, wherein the deposition temperature ranges between 600°C and 700°C.

15 3. The method of claim 2, wherein the step of defect creation includes an implantation step.

4. The method of claim 3, wherein the implantation is performed through a silicon oxide layer of a thickness lower than 10 nm and wherein this implantation is followed by a step of removal of the silicon oxide layer.

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5. The method of claim 3, wherein the implantation is an implantation of an electrically neutral element.

25 6. The method of claim 3, wherein the implantation is an implantation of an element chosen from the group containing fluorine, silicon, germanium, boron, indium, phosphorus, arsenic, and antimony.

7. The method of claim 6, wherein the implantation of an electrically neutral element is a fluorine implantation at 12 keV, at 10^{13} at./cm².

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8. The method of claim 1, wherein the window opening has a width lower than 5 µm,

preferably, on the order of 0.35 μm .

9. The method of claim 8, wherein the width of the window opening is reduced by compound spacers.

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10. The method of claim 9, wherein the compound spacers comprise silicon nitride regions, and polysilicon spacers.

01/19/2001 15:36 FAX:6177202441 WOLF GREENFIELD